any plans to accelerate the rate of growth of electronics by the year 2000. What concrete plans they have if they are not stopping the production, and then what are they doing to accelerate it?

SHRI K. R. NARAYANAN; Sir, there is actually no complacency. It is a very objective fact that electronics production has increased in India, not only in value terms, but in very objective concrete terms. If anybody would look around, he would see the role played by electronics in the economy today. As far as the rate growth is concrned, the hon. Member must be aware that we have laid a target of Rs. 10,000 crores worth of electronics production by the year 1990. And I think we are well on the way of achieving this target. And beyond that we have **set** in motion several programmes for production of highly sophisticated electronics equipment, whether it is in communication, whether it is in defence, whether it is in CAD and various other applications of semiconductor applied technologies, they have marched almost on a broad front by selecting various sophisticated sectors at the same time, so that we do not have not only electronics for service sector or production sector, but even -we have in agriculture, commerce, railways, airlines, we **are** also developing highly complex computers, like parallel computing elecfonic automatic switches in comemunicaitions and in various field of crucial importance to the nation in electronic technology, we have not only planned, but takes particular action.

[The question (Shri Ram Awadhesh' Singh) was absent for answer vide cols 27-28 *infra].*

Expert committee's report on computer virus

*23. SHRI FUTTAPAGA RADHAKRISHNA: Will the **PRIME MTNISTER be pleased to refer to answer to Unstarred Question 3178 given in the** Rajya Sabha on the 28th March, 1989 and state;

(a) whether the Expert Committee set up by the Department of Electronics to look into the Computer virus problem and its remedies has since submitted its report to Government; and

(b) if so, what are the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN): (a) and (b) The Expert Committee set up on 25th March, 1989 by the Department of Electronics to make a study of the problems relating to 'Computer Viruses' and make suitable suggestions for its remedy, is yet to submit the report to the Government. The Committee is to submit its report within a period of two months.

SHRI PUTTAPAGA RADHAKRISHNA: My question is based on an Unstarred Question answered on 28th March last. That time also, the answer was that a Committee had been set up. Now, the Minister gives a date, that is, 25th March. I was under the impression that the Committee was appointed long ago before the Minister answered the previous question. Sir, that Unstarred Question related to computer virus in Visakhapatnam. Sir, Visakhapatnam is a fast developing city and there is a big computerisation work in that city. But this problem of computer virus has come in the way of computerisation. Havoc created by computer virus is a serious matter and the Government, it seems, is taking it in a routine course. I want to know from the Goernment whether the Government is serious on obtaining a report from the eommittee of experts within two months **or they** will take **it** in **a** routine **way and**

just ignore the appointment of the committee itself.

SHRI *K.* R. NARAYANAN; I have already stated that the eommittee was appointed on 25th March. The last question which I answered in the House was after the eommittee was set up. Therefore, the eommittee was set up before the question was put in the House. Now, we have asked the eommittee headed by Prof. H. S. Mahabala, a prominent computer expert, to submit its report within two months. Therefore, there is no question of going slow about it. They are working on this problem. It is a brand new problem all over the world and, therefore, we cannot suddenly find a solution in India. In developed countries, this new kind of virus has come about. It is not a biological virus, but a programme somebody has artificially introduced into the computer system in order fo spoil the whole system, sometimes as a practical joke. But the result is the same and the whole computer system will be spoiled. We know many people are already working in this field to find an antidote. Some kind of a vaccine or antidote they have already produced and work is going on. What the eommittee is going to do is to look into the work that is going on and if further work in required to be done. They will recommend to the Government what kind of programme is to be taken up to face this new menace.

SHRI VISHWA BANDHU GUPTA hope this is not a virus as in the opposition parties.

SHRI PUTTAPAGA RADHAKRISHNA; The hon. Minister has afatted one name, *who* is a computer expert. I would like to know from the Minister whether there is any expert in biological problems on the eommittee and also who are the other members who are experts in various fields or in the same field on the eommittee. *1* would also like to know trom the **ben.** Mrftteter whether the're is any representative from the local areas where the computer virus is noticed.

SHRI K. R. NARAYANAN: I can give the names of the other members;ProH. S. (Mahabala is the Chairman. The other members are: Pro. P. S. Grover, Head of the Department of Computer Science Delhi University; Shri P. Sadanandan, Head of Databases and Office Information System; Shri Manoj Saxena, Senior System Engineer, CMc Dr. Y. K. Sharma, Additional Director, NIC and Dj- Gulshan Rai, Department of Electronics. May I say that this is not a biological virus? ?This is only a technical virus and, therefore, no biologists need be there on this Committee.

SHRI PAWAN KUMAR BANSAL: The virus afflicting them is that they do not understand things.

SHRI KAPIL VERMA: Sir, this virus has affected, as I said in my Special Mention in the last Session, the Delhi University also. I think the virus is known as ASHAR. This has been detected I would like to know what is the enormity of the problem and what has been done about it. Secondly, what measures have been taken to prevent the entry into India of any computer software because this is a world problem? What coordination has been established with the other countries for the development of any antidote or vaccine? Actalluy, it is not a question of developing a vacicne. We have to evolve some kind of a method to stop the errors in the computers. I would like to know what has been discovered and whether the Government have started acting on it. Thirdly, I would like to know whether any measures have been taken to prevent the infection of the computers in our defence establishments. This is beacuse we have read in the newspapers that the son of a bin General in America played some mischief with some defence laboratory in America resuttjng is * logs/of.miUipiie of dollars worth,of re- ,

cords. Therefore, this can create icjiaos. Here, it fe only e mischief played by a boy. But there may be somebody who may do it deliberately; some of our enemies may try to do it in order to destroy our records, what have the Government done about it, particularly, in regard to our defence establishments?

SHRI K. R. NARAYANAN; Sir, so far, nobody has come to the Government with specific instances of virus infection in their computer systems. We have read reports of it existing in the computers in Delhi, in Bangalore and in Visakhapatnam. But no specific instances have been brought to our attention. Since this is also an international phenomenon, our computer scientists are working on it, and some have claimed to have invented an antidote to it. The spread of this virus internationally is also a possible danger because this happens through the interconnecting of computer system. Therefore, this can be transmitted from one computer to the other. We have absolutely no evidence or indication of any such virus having invaded our defence establishments, computer establishments. But we are very alert. There are various ways of dealing with it. One is, to keep the virus out. This is a kind of a precautionary measure to safeguard our computers so that nobody would be able to play with it or indulge in some mischief. Another is, to prevent the replication of the computer virus which has been put there. Another one is, blocking the malicious tricks that some people practice. These are some of the methods which people do adopt an other countries and we are going ahead with all these as precautionary 'measures. But so far, there has been ho evidence of any major occurrence of computer virus in the country.

SHRI KAPIL VERMA: I have said about the restrictions On imports to prevent the entry into India of ■infected software from other countries because this is happening in America.

SHRI K. R. NARAYANAN: This is a very relevant question because it has been said that part of the reason for the invention of this virus itself is to prevent computer piracy which is practised on a very large scale and, therefore, in order to induce people to buy software only from authorised sources and not from pirated black-market sources. This has been first introduced by some people in order to protect their business interest. Therefore, the first thing to do is to buy software system only from authorised dealers and not from small people who smuggle in and sell these things. This is the best precaution that one can take to prevent spread of this virus.

SHRI GHULAM RASOOL, MATTO; Mr. Chairman, Sir, in yesterday's newspapers it was reported that an Indian scientist had developed an antidote. I would like to know if the hon. Miinister knows about this scientist, and if so, what enocuragemerit he proposes to give to such scientists other than those who are in his own department.

SHRI K. R. NARAYANAN: We have seen the report. We are checking up with the scientists concerned and we will give every encouragement to such persons.

SHRI BIR BHADRA PRATAP SINGH: Mr. Chairman, Sir, fe it * fact that some vested foreign industrial interests who are not very happy with the growth of Indian computer industry are involved in the introduction of computer virus in India, and if so, what are the steps being taken by the Government to check this electronic invasion? Part (b) of my question is, in view of the widespread computer virus abroad, will the Government make an inbuilt preventive provision in its computer software development plans? Of course, this requires research and development plans in the country to eradicate this computer virus invasion.

SHRI K. R. NARAYANAN; So far we have not noticed any invasion of this type in India as I have been making it clear that no specific cases have been brought to our notice so far, but this is a danger to which we have alerted ourselves as well as others concerned. In any case, it is potentially a very dangersous thing not only because of its mischief but the havoc it can do to various establishments, whether it is defenec or airways or any other establishment. So, we are very alert but sof ar we have not seen any sign of invasion.

*24. *[The questioner (Shri Prithibi majhi) was absent. For answer vide cols.* 28-29 infra],

35. *[Transferred to the* 3rd *May,* 1989].

*26. *[The questioner (Shri Aladi Aruna* alia V, *Arunachalam) was absent. For answer vide col.* 29 *infra].*

Crashing of **IAF Planr at Pali in Rajasthan**

•27. SHRI SURESH KALMADI: Will the Minister of DEFENCE be pleased to state:

(a) whether an IAF plane crashed on April 3 in Pali district in Rajasthan; and

(b) whether a court of enquiry has been ordered?

THE MINISTER OF STATE IN THE DEPARTMENT OF DEFENCE PRODUCTION AND SUPPLIES IN THE MINISTRY OF DEFENCE (SHRI CHINTAMANI PANIGRAHI): (a) and (b) Yes, Sir.

SHRI SURESH KALMADI; Sir, there was the fire power demonstration by the Indian Air Force at Tilpat recently which showed that the pilots of IAF were second to none, but the other side is quite unfortunate. There had been a series of accidents, especially in the month of April. It started with a crash in Pali on 3rd April. We had a MIG 21 crash at Pathankot. We had another Canberra crash at Poona and then we had another trainer crash at Madras. All these are known crashes and aH in one month. It is not only the question of the month of April, but for the last four to five years we have been noticing a series of air crashes. One disturbing aspect of these accidents is that MIG 21 is involved in most of these accidents. I would like to know if the Defence Ministry is alive to the situation and what steps are being taken to tackle this problem. Is it the problem at Nasik where we are trying to indigenise the MIG 21? if there is any problem there, whether any specific problem has been pointed out and also what steps are being taken to introduce a new trainer. On the one hand we have to fly very very sophisticated aircraft and on the other we find that the trainer aircraft which is required for people to graduate on to this very very sophisticated aircraft, are not up to the mark. I would like to know whether any decision has been taken on a new trainer to teach aH our pilots on to a modern aircraft.

THE MINISTER OF DEFENCE (SHRI K. C. PANT): Sir, as my hon. friend knows very well from his own experience, our pilots are really very good and he mentioned the recent demonstration at Tilpat which went off extremely well and which created the desired impact within the country and even outside. But on the question of accidents, there is nocountry in the world, including the most developed, which can altogether avoid accidents and the reason is that whereas in civil flying, the accent is on safety, in military flying the accent is on being to counter situations which arise in warfarte and therefore we have to carry both the men and the machine to the extreme limits of endurance. Unless they go through that process, they arfe not ready for the crisis when it comes. This is the difference and that is why inevitably there are accidents al lover the world. But this does not mean that there is any complacency about it. I agree with my hon. friend that in April